

06/16/2010

Appl. No. 10/597,718

Response to Office Action of February 18, 2010

Amendment Dated: May 18, 2010

### **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### **Listing of Claims:**

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Currently Amended) A method for fabricating a microarray, the method comprising:

immobilizing on a support of a microarray:

a quality control (QC) probe and a target probe; or

a spacer base and a QC probe which acts as a target probe;

wherein the target probe or the quality control probe which acts as a target probe comprise an oligonucleotide having a sequence complementary to a base sequence of a target material; and

wherein the quality control probe or the quality control probe which acts as a target probe comprise an oligonucleotide labelled at one or more positions with a

fluorescent material having a different excitation/emission wavelength from a fluorescent material labelled in the target material, wherein the QC probe has the same base sequence as that of the target probe, but is labelled with a fluorescent material having a different excitation/emission wavelength from a fluorescent material for the target probe.

7. **(Currently amended)** The method of claim 6, wherein the QC probe and the target probe are ~~eDNA~~ cDNA, oligonucleotide, peptide or protein.
8. **(Original)** The method of claim 6, wherein the QC probe and the target probe are simultaneously immobilized on one spot.
9. **(Currently Amended)** A microarray having immobilized thereon:
  - a spacer base; and
  - a quality control (QC) probe and a target probe, or a QC probe which acts as a target probe;

wherein the target probe or the quality control probe which acts as a target probe comprise an oligonucleotide having a sequence complementary to a base sequence of a target material; and

wherein the quality control probe or the quality control probe which acts as a target probe comprise an oligonucleotide labelled at one or more positions with a fluorescent material having a different excitation/emission wavelength from a fluorescent material labelled in the target material, wherein the QC probe has the same base sequence as that of the target probe, but is labelled with a fluorescent material having a different excitation/emission wavelength from a fluorescent material for the target probe.

10. **(Original)** The microarray of claim 9, wherein the QC probe and the target probe are simultaneously immobilized on one spot.
11. **(Cancelled)**
12. **(Currently amended)** A method of inspecting a quality of a microarray, wherein the microarray of claim 9 is used to perform identifying an immobilization state of probes and/or a hybridization reaction with a target product, wherein a probe labelled with fluorescent materials having different wavelengths from each other is used to simultaneously inspect an immobilization state of probes and a hybridization reaction with a target product.
13. **(Original)** The method of claim 12, wherein the immobilization state of probes is identified by a scanning fluorescent signal produced by a fluorescent material labeled in a QC probe before or after a hybridization reaction of the target probe and the target product.
14. **(Original)** The method of claim 12, wherein the hybridization reaction of the target probe and the target product is checked by scanning a fluorescent signal produced by a fluorescent material labeled in the target product after a hybridization reaction of the target probe and the target product.
15. **(Cancelled)**
16. **(Cancelled)**
17. **(Previously presented)** The method of claim 6, wherein the fluorescent material is labelled at one or more positions of the base sequence of the oligonucleotide and the position is a 3'-end, 5'-end, or an internal position of the QC probe.

18. **(Currently amended)** The method of claim 6, wherein a spacer is further included between the probe sequence and the fluorescent material.
19. **(Previously presented)** The method of claim 6, wherein the fluorescent material is at least one material selected from the group consisting of Pyrene, Cyanine 2, GFP, Calcein, FITC, Alexa 488, FAM, Fluorescein Chlorotriazinyl, Fluorescein, Rhodamine 110, Oregon Green, Magnesium Green, Calcium Green, JOE, Cyanine 3, tetramethylrhodamine, TRITC, TAMRA, Rhodamine Phalloidin, Pyronin Y, Lissamine, ROX, Calcium Crimson, Texas Red, Nile Red, Cyanine 5, and Thiadicarbocyanine.
20. **(Previously presented)** The microarray of claim 9, wherein the fluorescent material is labelled at one or more positions of the base sequence of the oligonucleotide and the position is a 3'-end, 5'-end, or an internal position of the QC probe.
21. **(Previously presented)** The microarray of claim 9, wherein a spacer is further included between the probe sequence and the fluorescent material.
22. **(Previously presented)** The microarray of claim 9, wherein the fluorescent material is at least one material selected from the group consisting of Pyrene, Cyanine 2, GFP, Calcein, FITC, Alexa 488, FAM, Fluorescein Chlorotriazinyl, Fluorescein, Rhodamine 110, Oregon Green, Magnesium Green, Calcium Green, JOE, Cyanine 3, tetramethylrhodamine, TRITC, TAMRA, Rhodamine Phalloidin, Pyronin Y, Lissamine, ROX, Calcium Crimson, Texas Red, Nile Red, Cyanine 5, and Thiadicarbocyanine.